Opening Remarks

Scott M. Smouse
Senior Management & Technical Advisor - International
U.S. Department of Energy
National Energy Technology Laboratory

Good morning. My name is Scott Smouse and I manage the international programs at the U.S. Department of Energy's National Energy Technology Laboratory. I'm pleased to be here with you this week to chair this U.S. China Low-NO_x Combustion and SO_2 Control Workshop. I would like to take a few minutes to give a U.S. perspective on why we are here this week.

The availability of affordable energy is, and will continue to be, essential to world's economic development and growth. Energy forecasters agree that coal and other fossil fuels will be the dominant energy source for the foreseeable future. It is projected that the United States will still rely on coal for over half its electricity generation in 2020. Globally, developing countries, such as China, will also undoubtedly continue to use their abundant, domestic coal resources to fuel economic growth.

Worldwide, the coal power generation industry faces the dual challenge of meeting the requirements of increasingly stricter environmental regulation and the cost-cutting pressures associated with market deregulation and privatization. However, the economic need for sustained coal use must be balanced by improved technology to eliminate the adverse impacts that some emissions can have on the environment. Current pollution control technologies for coal-fired power plants have proven effective at reducing emissions by a factor of two or three at low-incremental costs. For example, low-NOx burners are now installed in about ¾ of all U.S. coal-fired power plants. The cost of controlling pollution today is lower than it was 20, and even 10 years ago, and today's equipment is significantly more reliable and effective at reducing emissions.
The U.S. Environmental Protection Agency released its annual air trend report and new acid rain data on September 15th of this year. EPA's data show a steady and significant improvement in air quality in the United States. This environmental progress has come even as the country has experience a 164 percent increase in gross domestic product and a 42 percent increase in energy consumption over the last two decades—showing that the environment can be protected while a country prospers its own domestic energy resources.

According to the report, U.S. power plants produced 10.2 million tons of SO_2 in 2002, 9 percent lower than in 2002 and 41 percent lower than in 1980. NOx emissions from power plants have also continued a downward trend, measuring 4.5 million tons in 2002, a 13 percent reduction from 2000 and a 33 percent decline from 1990 levels. These reductions could only have been achieved through the joint efforts of government and industry to invest in the R&D needed to bring improved, lower-cost technologies to the market. These investments have resulted in a wide range of combustion and post-combustion NOx control and flue gas desulfurization equipment that have improved air

quality in the United States at acceptable costs and make U.S. companies the world leaders in technology innovation and major suppliers of environmental equipment to utilities around the world.

As a country's economic prosperity increases, it will seek to upgrade the environmental performance of their energy systems. Since the passage of the Clean Air Act in 1963, the United States has made great progress in reducing the emissions of pollutants from coal-based power systems. In parallel, stricter environmental legislation in Europe and Japan has yielded similar environmental benefits. The United States, Japan, and Europe stared major efforts to reduce NOx and SO_2 emissions from their coal-fired power plants in the 1970's and 1980's. Other countries, such as Korea, started much later, in the 1990's, but were able to benefit from the earlier technology development and industry experience by installing the latest generation of pollution control equipment that had not only vastly improved performance characteristics but also significantly lower capital and operating costs. China is now in a position where its economic development necessitates the deployment of pollution control equipment in all sectors to protect its environment and citizens. However, China can benefit from all the technological improvements and cost reductions that have been achieved over the past 30 years and install the latest generation of pollution control equipment.

The United States Department of Energy and China's Ministry of Science and Technology agreed in August 2001 to invite U.S. vendors of NO_x and SO_2 equipment to a workshop where information on our technologies, experience, and capabilities could be with shared with China. Some of the U.S. companies here this week have been doing business in China for a long time, while others are making their first visit. In addition to those here this week, a number of other U.S. companies are interested in the Chinese market, but were unable to be here this week.

This workshop is just one of many joint activities that have been and will be conducted under the Fossil Energy Protocol between our two countries. The results of this workshop will be reported at the Permanent Coordinating Committee Meeting that will be chaired by DOE's Assistant Secretary for Fossil Energy Mike Smith and MOST's Secretary General Shi Dinghuan in 2 weeks in Washington, DC.

I must apologize that the U.S. Environmental Protection Agency and the U.S. Trade and Development Agency were unable to participate in this workshop as planned. As you may know, the U.S. Congress has not passed a federal budget yet for this year, which has restricted their travel. However, both agencies are interested in discussing possible follow-on activities after the workshop.

I would like to the Messrs. Shi Dinghuan and Xu Jing of the Ministry of Science and Technology for their support of our bilateral Protocol and this workshop and Mr. Li Zheizhong of NPCC and his staff for all their hard work in preparing for this week. We've been planning this workshop for over a year, and I'm glad that we are all finally here together in Shenyang. The representatives from Chinese utilities and power plants here this week are looking for cost-effective emissions control equipment. 43

representatives of U.S. companies are here this week, who are the world leaders in supplying that equipment.

I look forward to a productive workshop over the next 4 days and hope that the information to be shared will help China to improve its environment while creating business opportunities for U.S. companies.

Hsieh Hsieh